PRINTING SOLUTIONS

MS LaRio

USER'S MANUAL

1. Introduction

LaRio is the most innovative MS machine for the fabric continuous printing.

LaRio is equipped with the latest generation of KJ4 Kyocera printing heads and is available up to 7 different colors.

The use of the machine is easy, intuitive thanks to its easy -to -use touch-screen panel.

LaRio offers all the advanced functionality of industrial production machines together with the easy management and an impressive printing speed comparable to the faster traditional textile printer (as rotative).

The printer communicates with the outside and with the printing RIP by a 10 GbE-CX4 port.

1.1. Responsibility and user license

MS srl reserves the right to modify, without prior notice, the machine and its software, with the object to improve its performance.

Its software is supplied under " User license" and cannot absolutely be copied or reproduced without written specific MS srl authorization.

This manual cannot be reproduced ,completely or partially ,without specific MS srl authorization.

MS srl. , although having used the utmost care in the development of the machine, of its software and this manual declines any responsibility for their inadequate or improper use.

MS srl. cannot be held responsible in any way for any business loss or profits loss or damages related to improper use of the machine.

In no case MS srl can be held responsible for any damage related to output loss caused by possible failures.

The user is not authorized to modify, in any way, the machine and its mechanical, electrical parts and software..

MS srl. declines any responsibility for possible bad workings due to modifications on the machine.

It's absolutely forbidden to use the machines without the safety devices provided at the installation.

MS srl. declines any responsibility related to incidents happened in absence of safety devices.

1.2. Operating environment

The printer is designed to work with an environment temperature within 20 and 30 degrees with a relative humidity within 45 and 65 %. Outside these parameters it is not possible to ensure the right performance of the inks.

It is also absolutely necessary to check the belt adhesive status before starting to print, warming it up if necessary. The fabric detachment during the printing process can cause damages on the heads carriage not covered by the warranty.

2. Commands, switch on/off

The switch on/off are activated by the general switch positioned on the main electrical board door.

Note: before switching off the printer, check that all the printing bars are in “parking position” and that the capping are properly closed.

Attention: the proper printer working requires compressed air feeding. If the correct air feeding is missing the ink pressure on the heads cannot be kept with possible color leakages and the press cylinder will not apply the correct pression.

At the switch on, the inside computers perform the diagnostic procedure and the software loading; in this phase the control panel will look black for some seconds. After the loading the system, the software will perform the external components diagnostics procedure and, in absence of errors, the screen will display as in the following page.

Most of the functions are managed by the touch screen.

Attention: the software control is replicated on a iPad wireless connected to the printer. The reliability of this control system is related to the wireless connection. If the pad looses the connection the operator will not be able to control the machine.

Beside the touch-screen some service buttons are positioned on rear part to make easier the machine management.

Emergency push buttons are located in every part of the machine as well as the buttons to put the printing in “pause”.

In case of pressing an emergency button the machine will stop immediately. To restart the running ,all the engaged emergency buttons must be released and the reset blue button aside the control panel must be pressed.

Attention: the printer is equipped with safety sensors on each lateral doors. Blocking or deactivating the closing doors sensors is strictly forbidden. Working on the machine with open doors is absolutely forbidden.

Pressing the “Play” icon the machine will perform the initialization cycle of the mechanical running. Pressing the “Maintenance” icon you will enter the reserved area of the machine parameters. Access to this area is protected by a password for the authorized technical personnel.

In case of error in the initialization procedure the screen will display the error code and a short description of the problem beside a series of buttons.

The buttons shown change according to the error. The possible options are the following:

[Continue] It means that the error does not compromise the safety and that you can proceed with the normal initialization procedure. The component at the origin of the error could respond not properly . Therefore the printing could not be possible and a diagnostics of the problem is necessary.

[Restart] The error compromises the proper functionality of the machine and must be diagnosed by qualified personnel with the help of external appliances.

[Maintenance] It’s displayed in case of an important error and it allows the access to the diagnostics phase reserved to authorized personnel.

[Try again] It shows a temporary error that can be solved by restarting the initialization.

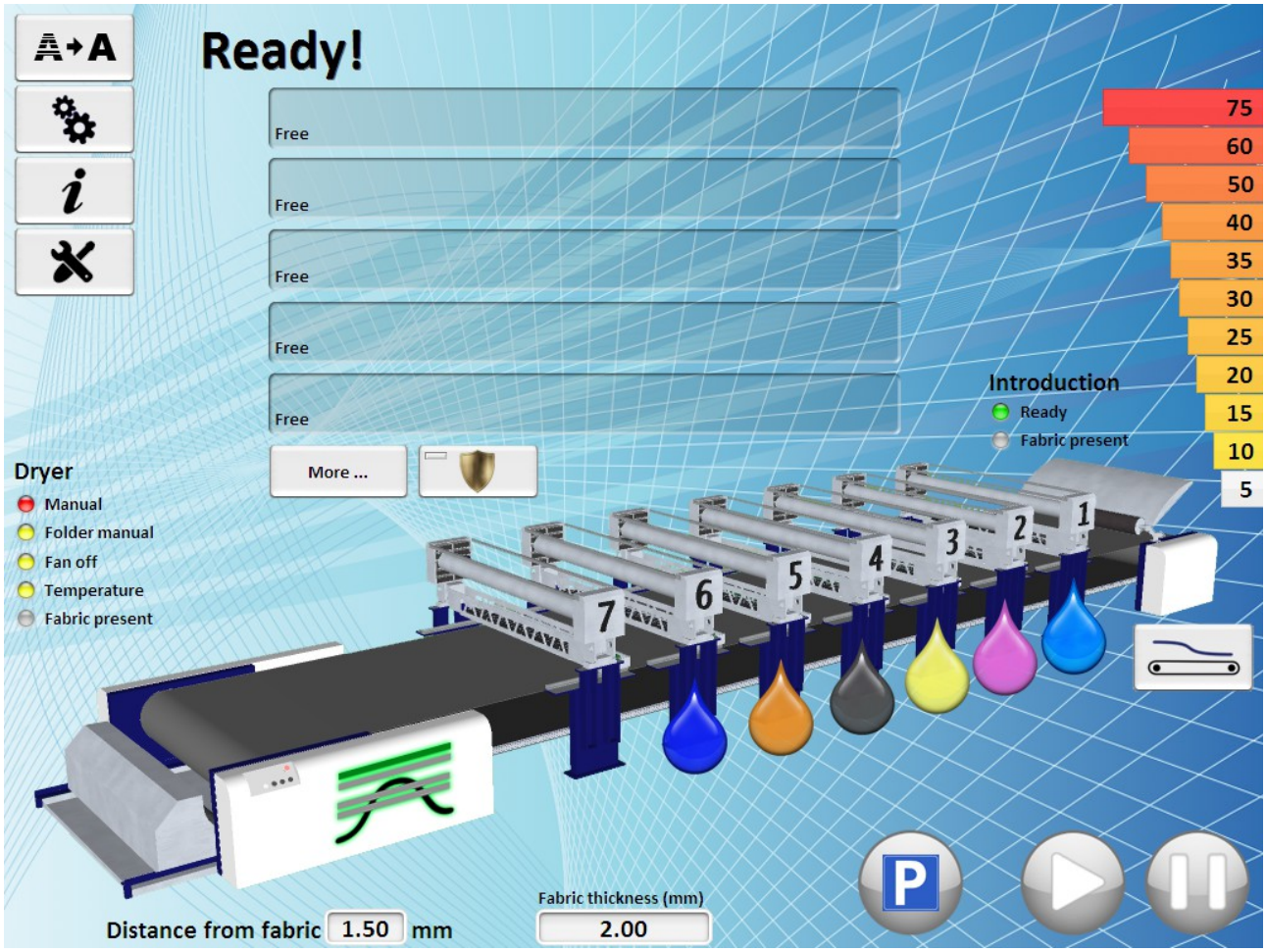
In case of successful initialization the screen of the control panel will display like below.

3. The main panel

This page is the main interface of the machine where you can check and control most of the parts to perform the print out or the operator maintenance.

Since the machine is not a real time printer, all the RIP software send the data to the machine that archives them in on-board memory. Each print out received by the RIP is called “job” and they will be displayed in the job list available in this panel or in the advanced job list panel.

When at least one job is available the machine is ready to print and it does not need any connection with other external software.



From this interface you can enter in the specific panels to manage maintenance or setting operation, with the appropriate buttons.

But now we start to describe all the components visible in this panel that represent the major part of the operation the machine is able to do.

3.1. Machine information

The main feedback information is readable in the upper part where is always indicated the machine status related to the current operation in execution.

There are also information about the *Dryer unit* and the *Introduction unit* listed with a green/red/yellow led associated to describe the current status of each component. The behind concept is that you need all green led to print perfectly, but some of them are mandatory to perform the print out, some others are only indications.

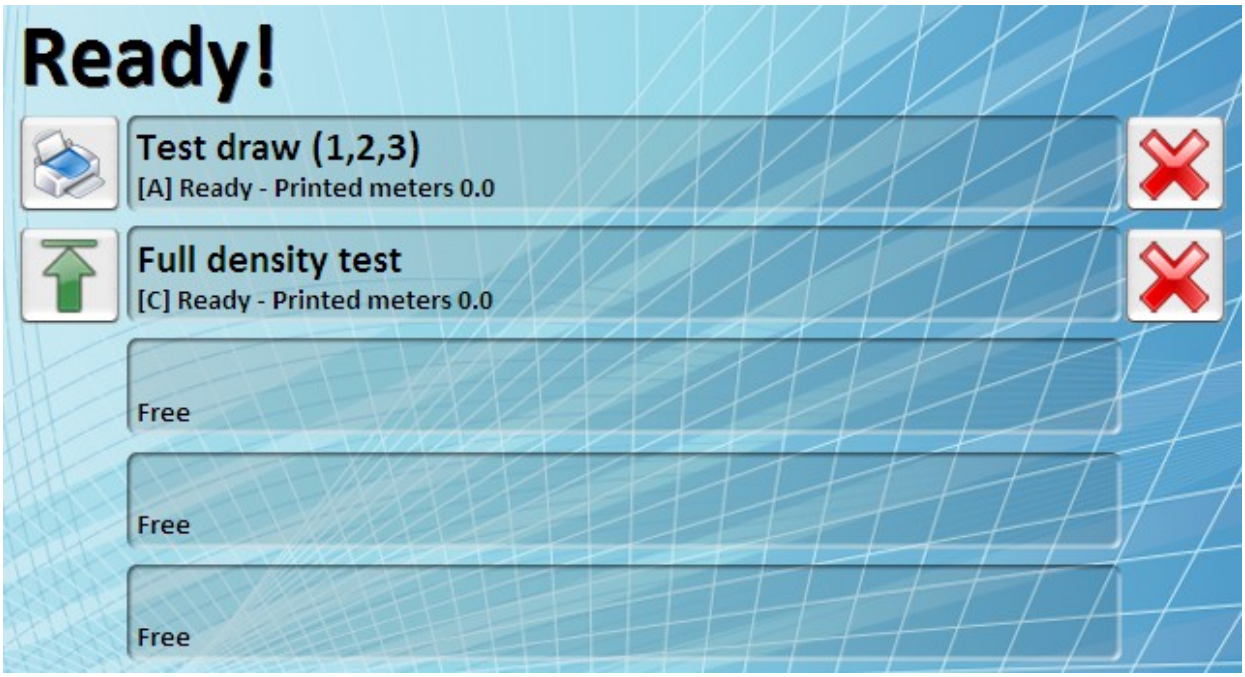
Manual or Automatic: mandatory green if also the Fabric present is green;
Folder manual or automatic: green if the folder is in automatic mode; only indication, not mandatory to print;
Fan off: green when the dryer fans are running; only indication, not mandatory;
Temperature: green if the dryer has reached the set temperature; only indication, not mandatory;
Fabric present: green if there is a fabric that connects the printing unit with the drying unit; only indication, not mandatory;

Ready: green if the introduction is ready to run; mandatory;
Fabric present: green if there is a fabric that connects the printing unit with the introduction unit; only indication, not mandatory;

3.2. Jobs queue

The machine is able to archive in the internal memory a variable number of jobs (design). The maximum number depends by the jobs repeat length, printing mode and machine available memory. In any case it is not possible to load more then 24 jobs.

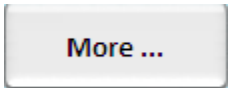
In the main page are shown only at maximum 5 jobs but pressing the "*More ...*" button you will enter in the job queue extended page where you can see 12 designs.



For each jobs are available these information:

- job name, the color of this information change according to the job status: black means ready, green means printing, orange means paused or changing, red means closing;
- printing mode (the letter between square bracket);
- job status;
- printed meters;
- meters to print (if set);
- job link option (if set);

Further there are buttons that permit to perform some operation on the related job:

	Delete the job from the list. If it is the printing job, the print out will be aborted.
	Activate the job. After this command the machine is ready to print. Available when the first job of the list is ready.
	Move the job to the top of the list. Available only the machine is not printing.
	Shield. The printer will pause automatically 3.5 meters before the first bar will complete the last job in the queue.
	Open the extend job list page.

The job queue management is a powerful feature of the LaRio machine that allow to the user to arrange a print out of different design without stop the machine. Thanks to this capability the printer is really flexible and permits to the user to make big production (thousand meters) followed by sampling of short runs of hundred designs! In continuous printing, without losing time or fabric because is possible to load new jobs in the machine while it is running and because the job change let only 10 cm of white space between each images.

The are few rules to respect to use in the best way the job queue:

1. The maximum number of jobs is related to their repeat length, their resolution and the machine memory. When the printer is not able to accept new jobs there will be a communication error or indication on the RIP software.
2. By default the machine will connect all the coming jobs only if they have a specified requested meters length. In fact a job without this information will be print “forever”. While if a job is set to print a defined length, after that, if there is another job, the machine will automatically start to print the next one.
3. The limit to connect the jobs is 3 meters before the first bar will complete the print out. After this measure the machine will not change the job but will close the current one. The risk in this case is that if the operator send the next job too late will remain 7 meters of

white space on the fabric. To help the operator in this management has been implemented the Queue Shield function.

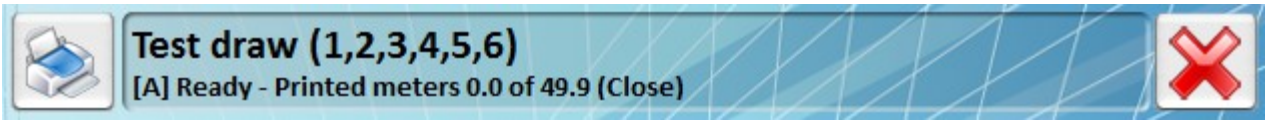
Some examples will explain better the possible condition in the queue.

Example 1

There is one job in the queue without length parameter. It will be printed in continuous and must be stop manually.

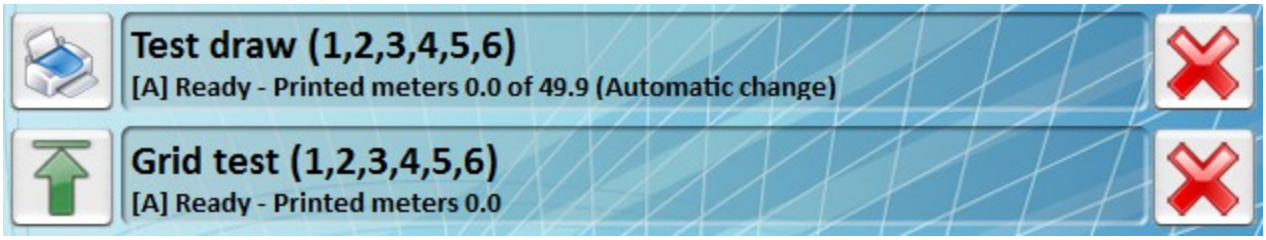
Example 2

There is one job in the queue set to 49.9 meters. It will be printed for 49.9 meters then will be close.



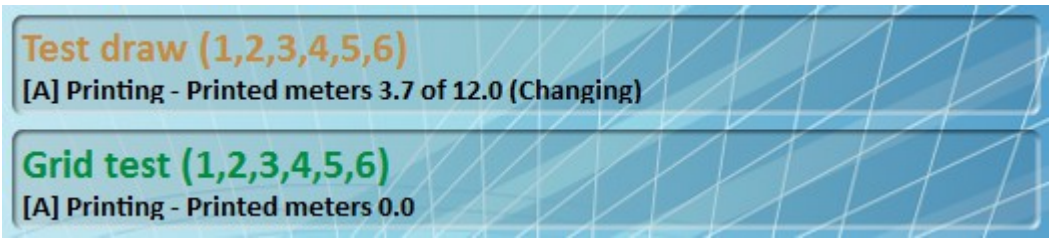
Example 3

There are two jobs in the queue. The first one is set to 49.9 so the machine will automatically start to print the second one after this measure. The will be 10 cm of white space between the two printings. The second one has not the length parameter so will be print in continuous.



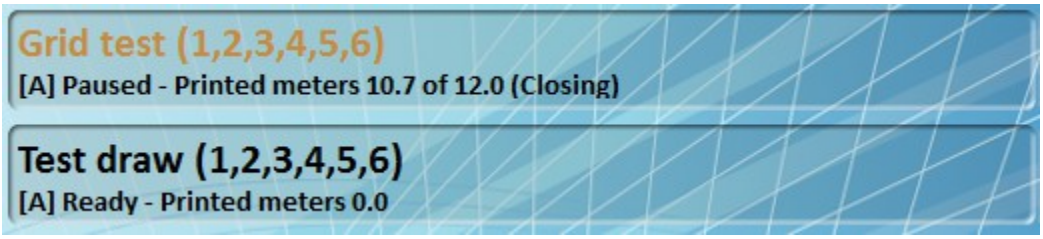
Example 4

There are two jobs in the queue and the machine is printing. At this moment it has complete 3.7 meters of the first design. The machine is changing the print from the first to the second job, this is the reason why they are colored by orange (job changing) and green (job starting to print).

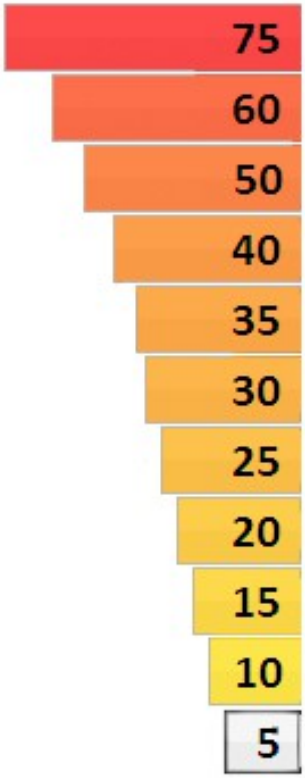


Example 5

This as a particular condition where the second job has been sent too late to make the connection. The print out of the first job has exceed the job connection limit of 3 meters before the first bar complete the printing. Due to this reason the first job will be close without change to the second one.



3.3. Parameters



In the main panel are present some important parameters:

these are the **speed** selection buttons that allow to modify the movement speed of the belt, both while the machine is printing and while it is only moving the belt.

It is possible to change the speed by step of 5 meter per minute (as indicated in the button label).

The highest speed reachable in not printing mode is 75 meters per minute, while the machine is printing the highest speed depends by the printing mode as shown following:

Mode A Highest speed 75 meters per minutes

Mode B Highest speed 50 meters per minutes

Mode C Highest speed 35 meters per minutes

Mode D Highest speed 25 meters per minutes

Mode F Highest speed 15 meters per minutes

The speed does not affect the print out. It is always possible to modify the belt speed while printing without any problem on the design.

This parameter represents the distance from the head plate to the fabric. This is a reasonable value only if the Fabric thickness has been set correctly.

This parameter represents the thickness of the fabric.

The sum of the two values (**Distance from fabric** and **Fabric thickness**) represents the distance between the heads plate and the belt surface.

The **Smart Start** button has two different states:

Active.

Not active.

This parameter describes the way the machine will start to print a design. It is enable only at the beginning of the printing. During a pause it will be disable.

Activating the Smart Start the print bars will move at the safe position (default value at 20 mm over the belt) and only when the reference point on the belt will pass under each bar it will move down to the printing position (usually few mm up from the belt).

The reference point is the position where is the folder sensor (close to the press roll) at the beginning of the printing unit.

If the Smart Start is not active, starting a printing all the bars will move down directly to the printing position.

We strongly suggest to use the Smart Start any time it's loading a new fabric because the beginning of the bolt is not always completely flat. With this procedure the print bars will jump over the initial bad folds. It is useful to disable it only when the fabric is already load in the printing unit until the dryer.

3.4. Commands, how to print

PARK. This command move all the bars to the capping position, that is the safe position to avoid the heads drying.

Always make this operation before to switch off the machine.

PLAY. This is the main command of the machine. It can assume two different meanings:

1 - move the belt without printing;

2- start the print process;

This is an important difference that explain the two ways of work of the machine: **free move process** and **printing process**.

The current mode is represented by the color of the PLAY button:

Free move process (flat white)	Printing process active (blinking means ready to print, flat means printing)	It is not possible to run the belt for different reasons

The first mode is used in the **fabric loading** time: during this procedure the operator needs to move the belt manually at the desired speed, he needs to activate manually the rear press roll and the machine must not print to avoid heads crashes with the fabric or other things present on the belt.

A fabric is considered completely and correctly load when there are any folders or protrusion before the reference line, that is represented by the folder sensor at the beginning of the print bars. So all the coming fabric must be completely flat and well attached to the belt.

After this operation is possible to activate the second way of work of the machine: **the printing process**.

This can be done simply activating the first job in the list with this button.

Pushing this button the PLAY button will start to blink in green color as in the the previous icon.

From this moment, the printing process will start immediately just pushing play.

This is the sequence of the automatic operation that the machine executes to start the printing process:

1. movement of the print bar to the printing position (down close to the fabric at the desired distance, according to the Smart Start parameter section)
2. activation of the washer
3. activation of the rear press roll (that it is possible to disable only manually from the rear panel command)
4. movement of the belt (of the introduction and of the dryer)

Pause. This command in any case stop the belt movement. If the printing process is active, the machine enter in the pause state where is possible to make some maintenance operation like cleaning or job deleting. From this state, if the job is still active, it is possible to resume the printing process.

It assumes different color according to the current play procedure.

Enable It is possible to stop the belt movement

After the pression during the printing process. **Pause** mode.

Disable for different reasons

3.4.1. Exceptions

The printing process is a complex procedure that required different conditions to work correctly and may depends by all the parts of the machine.

The PLAY button could be disable or the process cannot start, so the next table describes the possible scenarios could happen.

During a cleaning the PLAY button will be disable and it will come available only at the end of the process.
The PLAY button is active and green blinking but the print process does not start. Two possible conditions: 1. The introduction is not ready. To print that unit must be ready to start, always. 2. The dryer is not ready: there is the fabric between the printing unit and the dryer unit is in manual mode.
The PLAY button become disable after automatic pause due to the job list shield. To be able to restart (play button enable) it necessary to deactivate the shield parameter or send a new job in the list, to be connected to the current one.

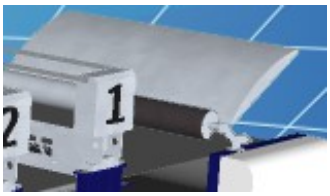
3.5. Status animations

In the main page there are some icon animations on the picture of the printing unit, that describe the status and the behavior of the washer, the rear press roll and the belt movement.

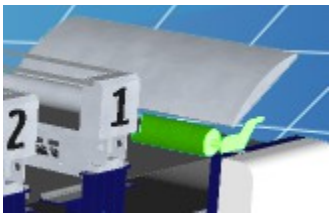
3.5.1. Press roll

For security reasons It is not possible to command the press roll from the main touch panel because it is far away from it. The only way to move it is to use the relative button on the rear control panel on the side of the printing unit (near to the press roll).

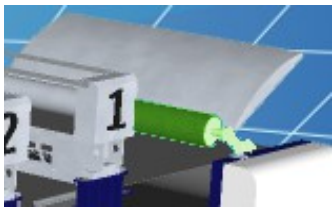
The icon on the main panel has four different color according to the press roll status:



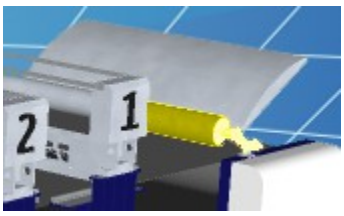
The press roll is up. It is not touching the fabric and if you press play for free movement process it remains up.



The press roll is down. It is touching the fabric and pressing it on the belt. It enters in this state for two reasons: **every time** the printing process has been started (press play with an active job) or manually pressing the button on the rear control panel.



The press roll is up without touching the fabric but it is active. It means that when the operator press the play button the press roll will move down, in any case: for free movement or for printing process.

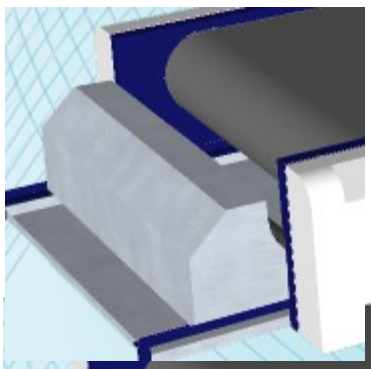


The press roll has been disable. It never will move down. It is possible to disable it only from the Debug panel with the highest right access.

3.5.2. Washer

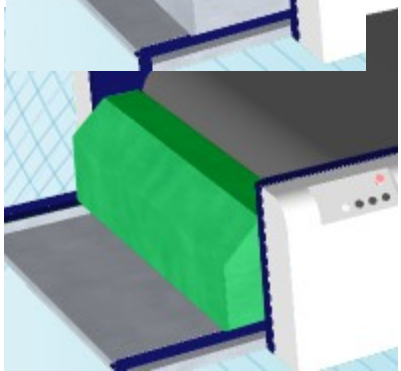
The washer is always automatically command. Every time the belt start to move it will move to start to wash. Of course the belt will not run until the washer is inside. There is the possibility to disable it only for maintenance reasons from the Debug panel with the highest right access.

The icon on the main panel can assume three different status:



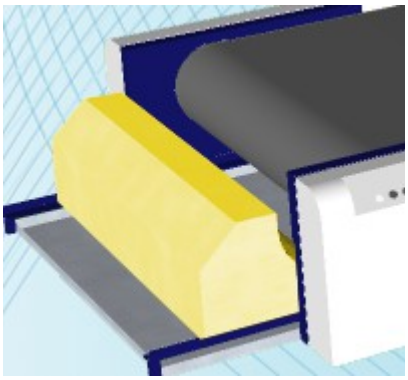
Washer out.

It is not touching the belt so it is not washing it.



Washer in.

It is touching the belt and it is washing it.

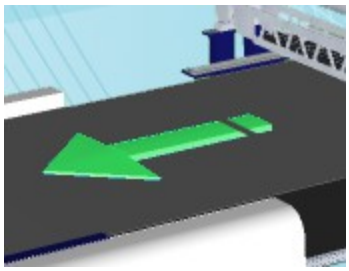


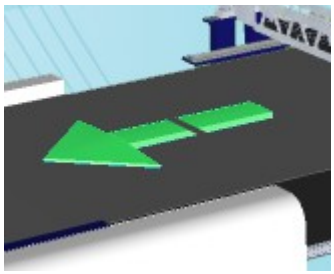
The washer is disable.

It never move inside also if the belt will start to move.

3.5.3. Belt movement

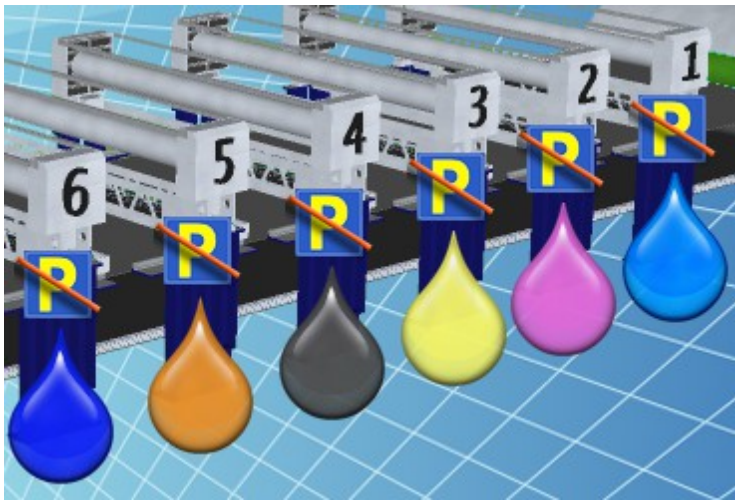
When the belt is moving on the interface will appear an animated icon to indicate the belt rotation.





3.5.4. Bar status

Each bar has an icon between the number and the color drop to indicate the current status. This icon can assume the following shapes:



The bar is out of the capping position since 4 minutes or more

The bar is moving to capping position

The bar is moving the capping station (horizontally)

The bar is moving vertically

The bar is moving on both the axis

The bar is moving up due to a fold detection

3.6. Fold detection

The machine has an integrated security system to recognize possible defects on the fabric surface. Due to the small distance between the media and the printing heads it is recommendable to avoid any roughness after the fabric lay down.

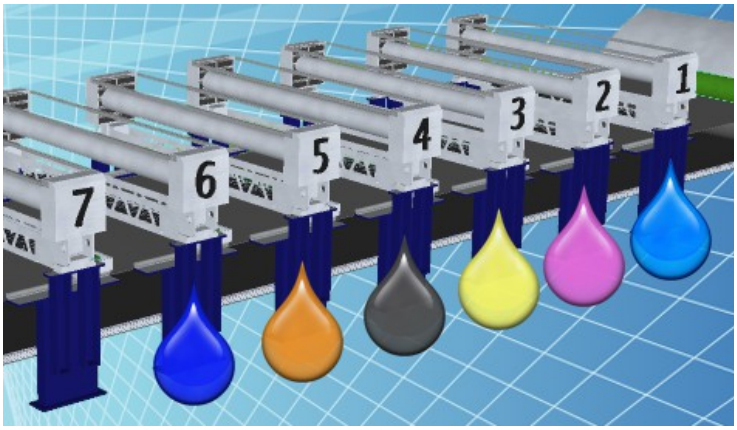
Very close to the press roll there is a laser barrier sensor dedicated to the detection of anythings higher then the printing distance. If something exceed the threshold the ***Ola*** procedure will start automatically: every bar will move up to 15 mm when the detected defect will pass under it.

When the procedure has started the fold icon will appear on the main panel.

3.7. Color bar icons

In the middle of the main page is shown the printing unit picture. It has up to 7 bars with all the colors present in the machine.

For each one there is the sequence number and the drop of the selected color. Pushing on this icon it is possible to enter in the restricted bar maintenance page.



The inks icons alternate with the icons below to indicate possible problems or intervention requests from the operator.

This icon means that the flashing color is exhausting. It is suggested to refill the main tank as soon as possible.

This icon indicates that the color has not achieved the working temperature. Heads are provided with an inside warmer to adjust the temperature. If the indication lasts more than one minute call for the technical assistance.

This icon indicates that the color has exceeded the maximum temperature allowed by the heads. If the indication persists for more than one minute call for the technical assistance.

This icon indicates that the negative pressure on the heads is over the allowed level. In this situation heads are unable to print. If the indication remains call for the technical assistance.

This icon indicates that there is a positive pressure on the heads. In this situation heads tend to drip and it's not possible to print. If the indication persists call for the technical assistance.

3.8. Pages navigation

The ""Cleaning" icon allows to enter the " Test draw" page, head cleaning and carriage

maintenance

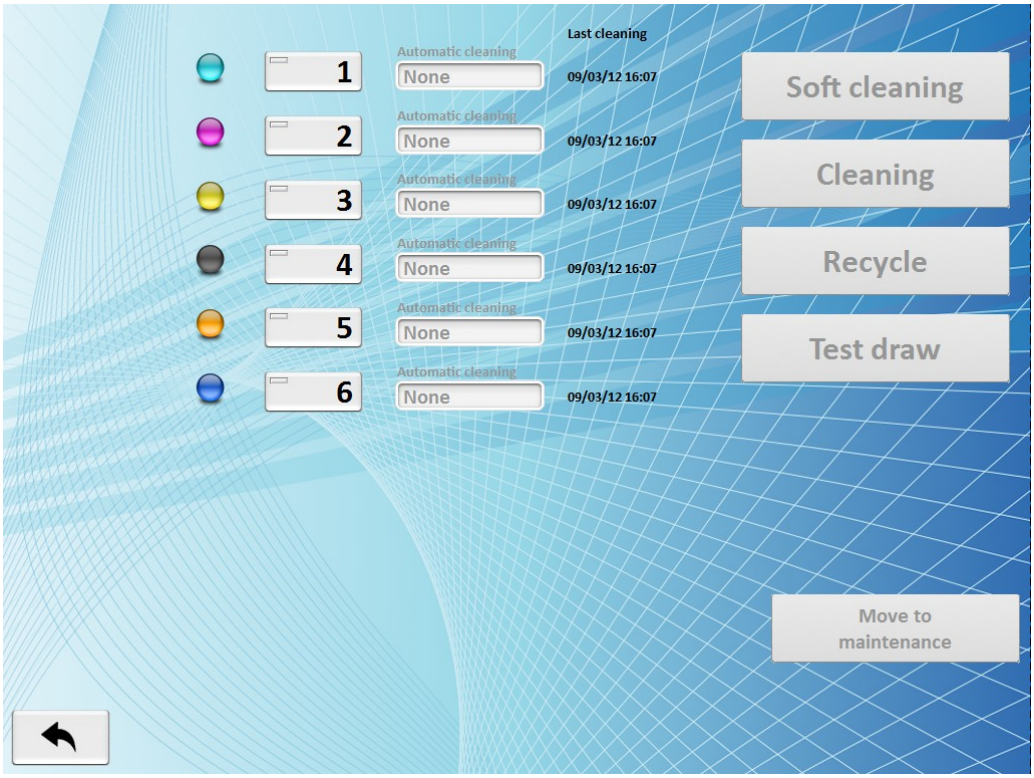
The “ Settings” icon recalls the presets, configurations and user access management

The “ Info” icon shows the page of additional info

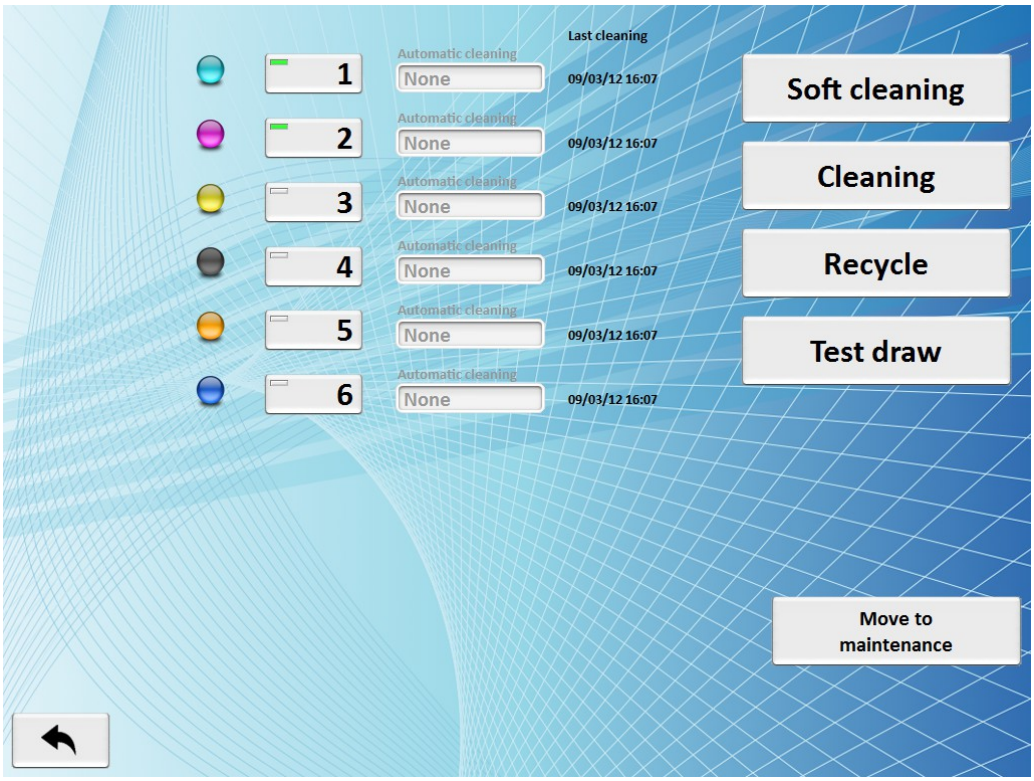
The “Maintenance” icon gives access to the restricted maintenance and machine parameters menus

4. Cleaning

In the “ Cleaning” panel it’s possible the selection of the colours on which cleaning procedures can be performed.



There are three button to start three different cleaning cycles. They come active after the color selection.



[*Soft cleaning*] Execute a fill-up of the heads using a limited amount of ink and then removes the liquid in excess.

[*Cleaning*] Performs the normal cleaning using pressurized ink and then removes the liquid in excess.

[*Recycle*] Fills the internal head chamber moving the ink from the in to the out pipes and through the nozzles then removes the liquid in excess.

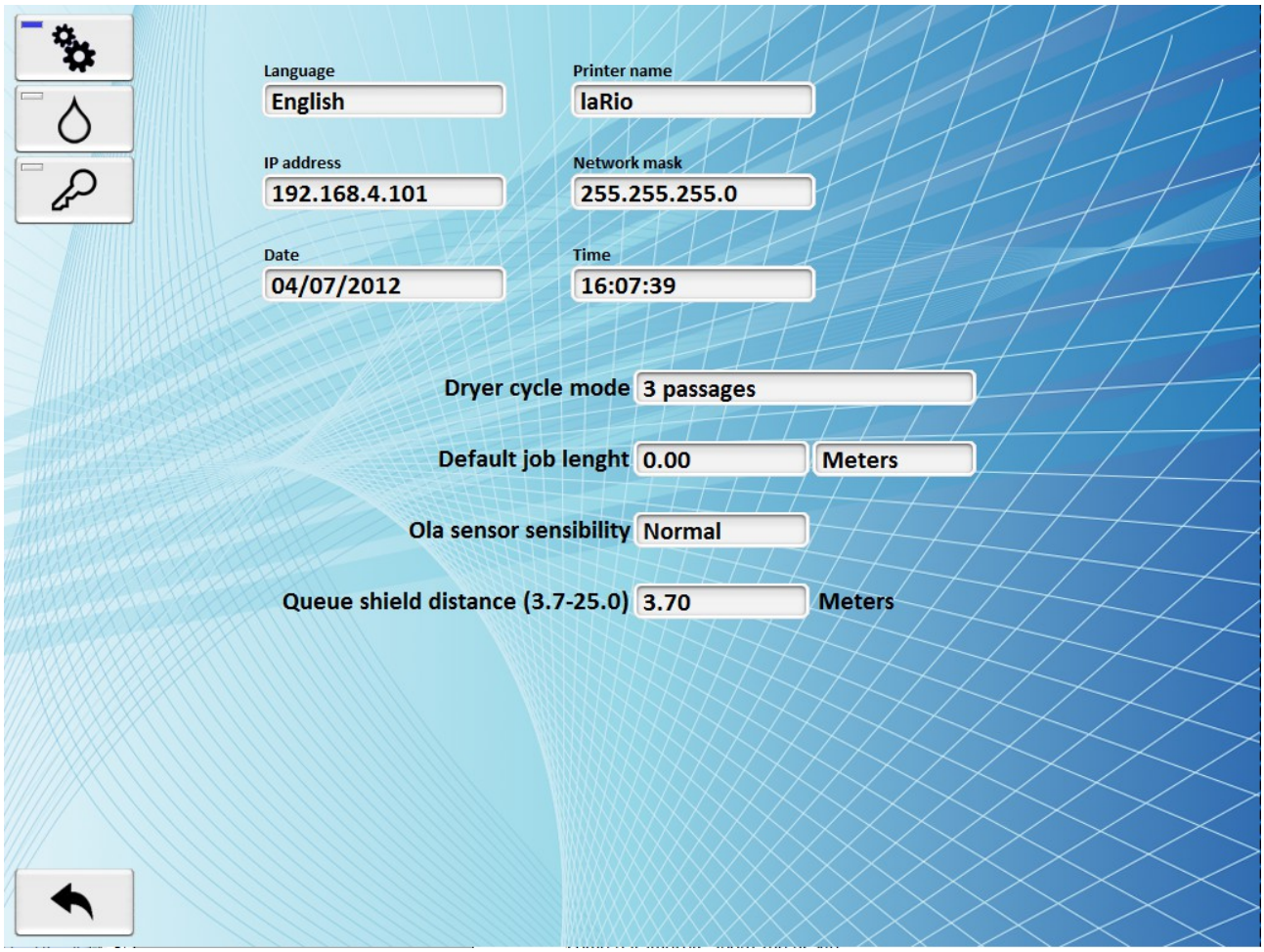
The button [*Test draw*] creates a job to print a verification nozzles test.

The buttons [*Move to maintenance*] moves the selected bars to a maintenance position (bar in the highest position and capping out.

5. General settings

This section contains setup parameters and main working parameters.

5.1. Parameters



The page “General settings” displays information about the configuration of the machine and some parameters about the usage.

[*Language*] It is possible to select the language of the software interface.

[*Printer name*] The name of the printer.

[*IP address*] This is a configuration parameter for the connection of the machine to the RIP computer. The modification of this value can prevent the communication with the printing software.

[*Network mask*] As the IP address parameter.

[*Date*] Current date, indicated in the machine logs.

[*Time*] Current time, indicated in the machine logs.

[*Dryer cycle mode*] Represents the current mode of work of the drying unit.

[*Default job length*] If it is different from 0, the value will be assigned at each received job as default length or default number of repeats.

[*Ola sensor sensibility*] Indicates the current sensibility of the sensor that recognize the folds on the fabric.

[*Queue shield distance*] It determines how many meters before the end of the print out (of the first bar) to make a pause (minimum value 3.7 meters, maximum 25 meters).

5.2. Ink settings

In this page there are the parameters related to the current inks. These value should be modified only at the start up or when an ink will be replaced.

[*Ink type*] This information must be related to the ink type indicated by the supplier.

[*Colour*] Name of the color load in the bars.

[*Head array*] Number of rows of heads present on the bar.

[*Temp.*] Target working temperature for the heads..

5.3. Authentication

All the commands and the parameters of the interface are restricted to the current user access level. This means that according to the user rights some buttons or parameters can be hide or

disable.

There are four different access levels: standard (no log-in), authorized, advanced, administrator.

[*Login*] Press this button and enter the password to perform the user login.

[*Logout*] Press this button and enter the password to perform the user logout. The current access level will be *Standard*.

[C*hange password*] Every user can modify his own password with this command.

A user can add another user of the same or lower level.

[*Add administrator*] Press this button and enter *User name* and *Password* to add another administrator.

[*Add advanced user*] Press this button and enter *User name* and *Password* to add another advanced user.

[*Add authorized user*] Press this button and enter *User name* and *Password* to add another authorized user.

The list in the lower part of the panel indicates the authenticated RIP software that can send data to the machine.

If the supplier name is not present in this list the RIP software **will not be able** to send the designs to the printer.

[*Login required to print*] If this parameter is active, must be necessary to execute the login before to print with the machine.

6. Additional information

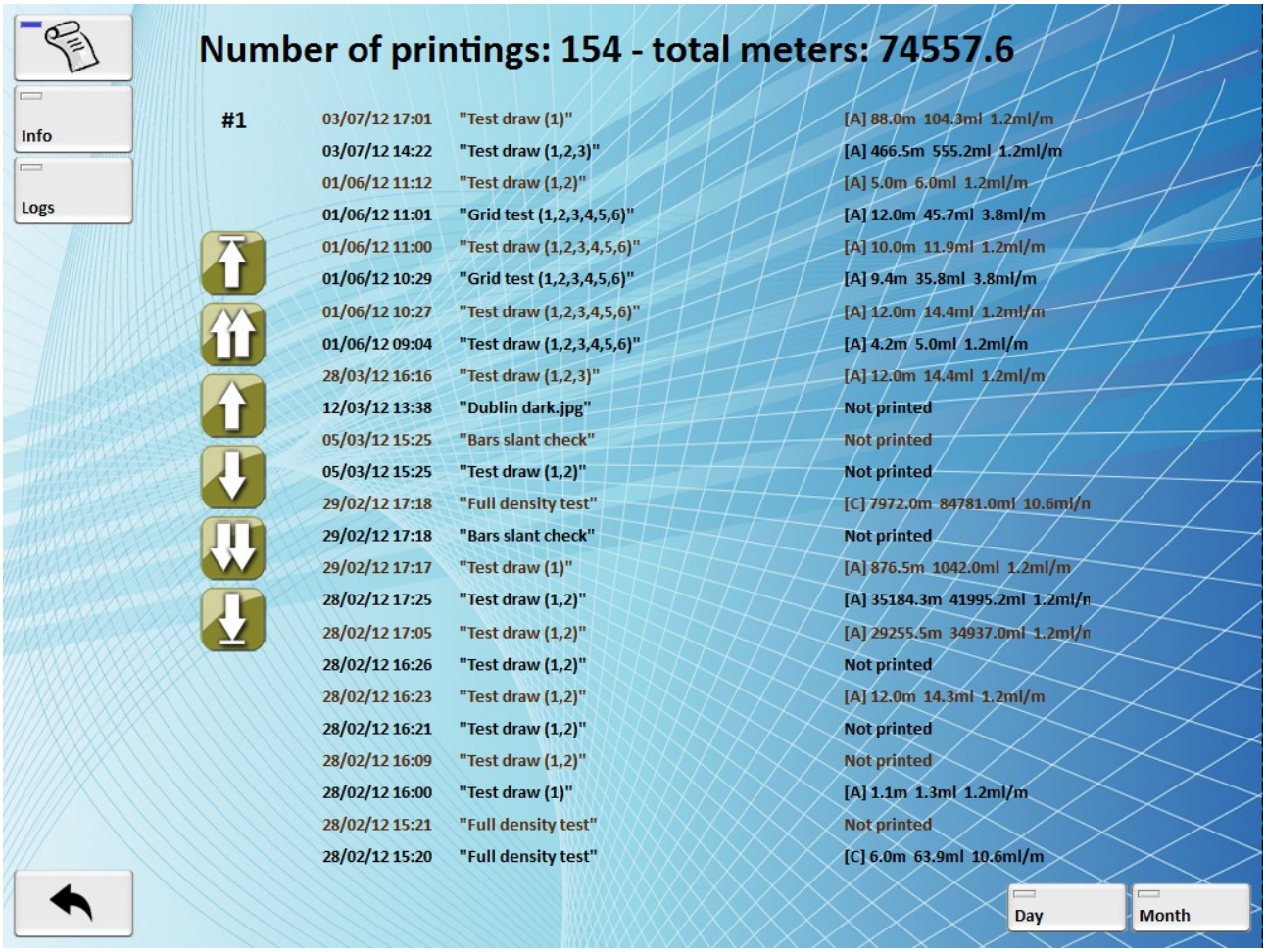
In this section the user can read different information about all the print out done, the software version load in the machine and other debug notes useful to receive a quick support from MS.

6.1. Job log

The printer automatically registers on the internal memorysome information of each print out.

In this panel the user can look through the print out database where on every item it is possible to read date and time, job name, print mode, printed meters, ink used (ml) fro the print out, average ink used (milliliters per meter).

The information line on the top indicates the total number of jobs and the total meters printed by the machine.

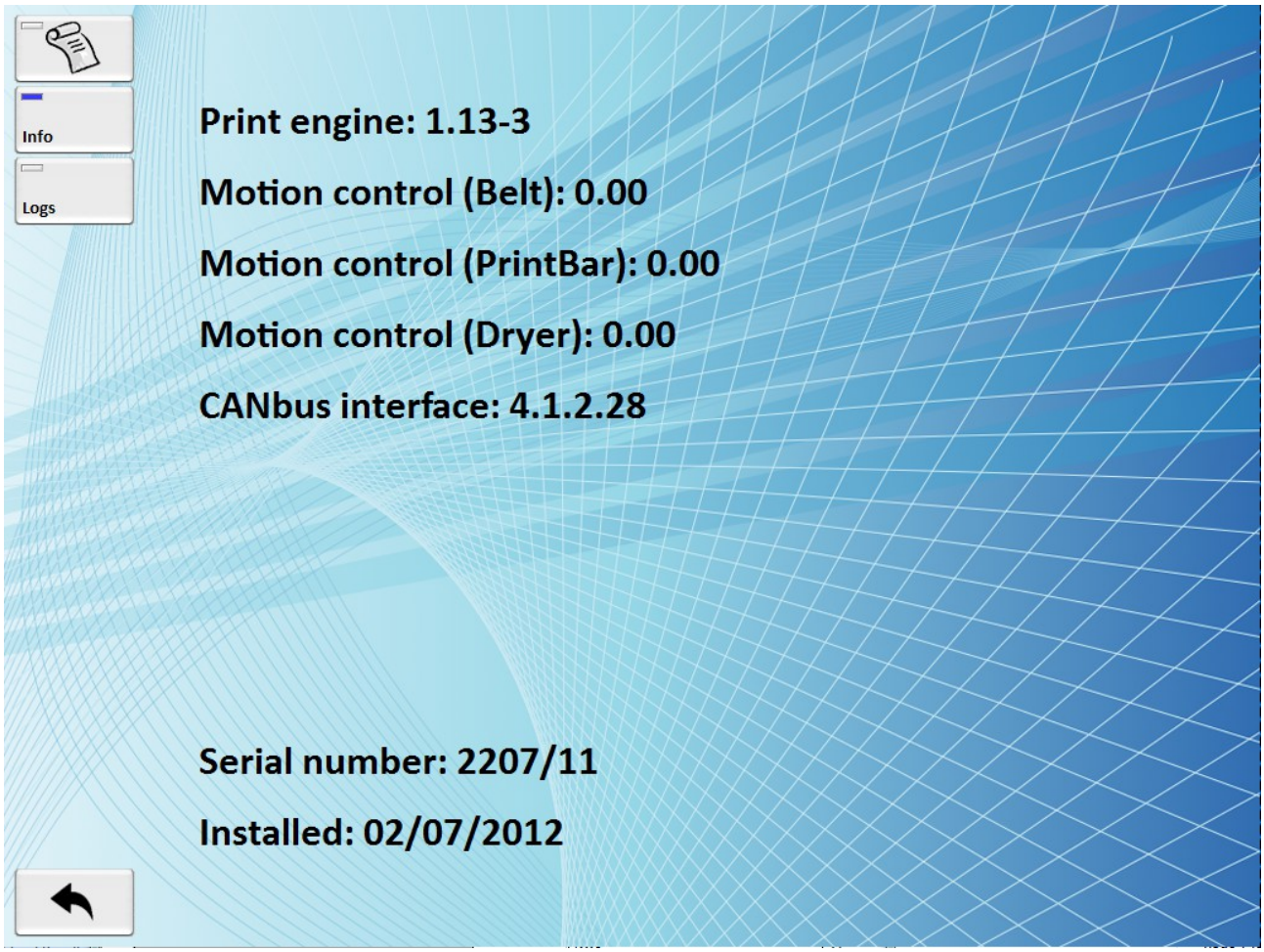

Number of printings: 154 - total meters: 74557.6
Info
Logs
#1
03/07/12 17:01 "Test draw (1)" [A] 88.0m 104.3ml 1.2ml/m
03/07/12 14:22 "Test draw (1,2,3)" [A] 466.5m 555.2ml 1.2ml/m
01/06/12 11:12 "Test draw (1,2)" [A] 5.0m 6.0ml 1.2ml/m
01/06/12 11:01 "Grid test (1,2,3,4,5,6)" [A] 12.0m 45.7ml 3.8ml/m
01/06/12 11:00 "Test draw (1,2,3,4,5,6)" [A] 10.0m 11.9ml 1.2ml/m
01/06/12 10:29 "Grid test (1,2,3,4,5,6)" [A] 9.4m 35.8ml 3.8ml/m
01/06/12 10:27 "Test draw (1,2,3,4,5,6)" [A] 12.0m 14.4ml 1.2ml/m
01/06/12 09:04 "Test draw (1,2,3,4,5,6)" [A] 4.2m 5.0ml 1.2ml/m
28/03/12 16:16 "Test draw (1,2,3)" [A] 12.0m 14.4ml 1.2ml/m
12/03/12 13:38 "Dublin dark.jpg" Not printed
05/03/12 15:25 "Bars slant check" Not printed
05/03/12 15:25 "Test draw (1,2)" Not printed
29/02/12 17:18 "Full density test" [C] 7972.0m 84781.0ml 10.6ml/n
29/02/12 17:18 "Bars slant check" Not printed
29/02/12 17:17 "Test draw (1)" [A] 876.5m 1042.0ml 1.2ml/m
28/02/12 17:25 "Test draw (1,2)" [A] 35184.3m 41995.2ml 1.2ml/n
28/02/12 17:05 "Test draw (1,2)" [A] 29255.5m 34937.0ml 1.2ml/n
28/02/12 16:26 "Test draw (1,2)" Not printed
28/02/12 16:23 "Test draw (1,2)" [A] 12.0m 14.3ml 1.2ml/m
28/02/12 16:21 "Test draw (1,2)" Not printed
28/02/12 16:09 "Test draw (1,2)" Not printed
28/02/12 16:00 "Test draw (1)" [A] 1.1m 1.3ml 1.2ml/m
28/02/12 15:21 "Full density test" Not printed
28/02/12 15:20 "Full density test" [C] 6.0m 63.9ml 10.6ml/m
Day
Month

[*Day*] This button apply a filter to the list, indicating the daily production.

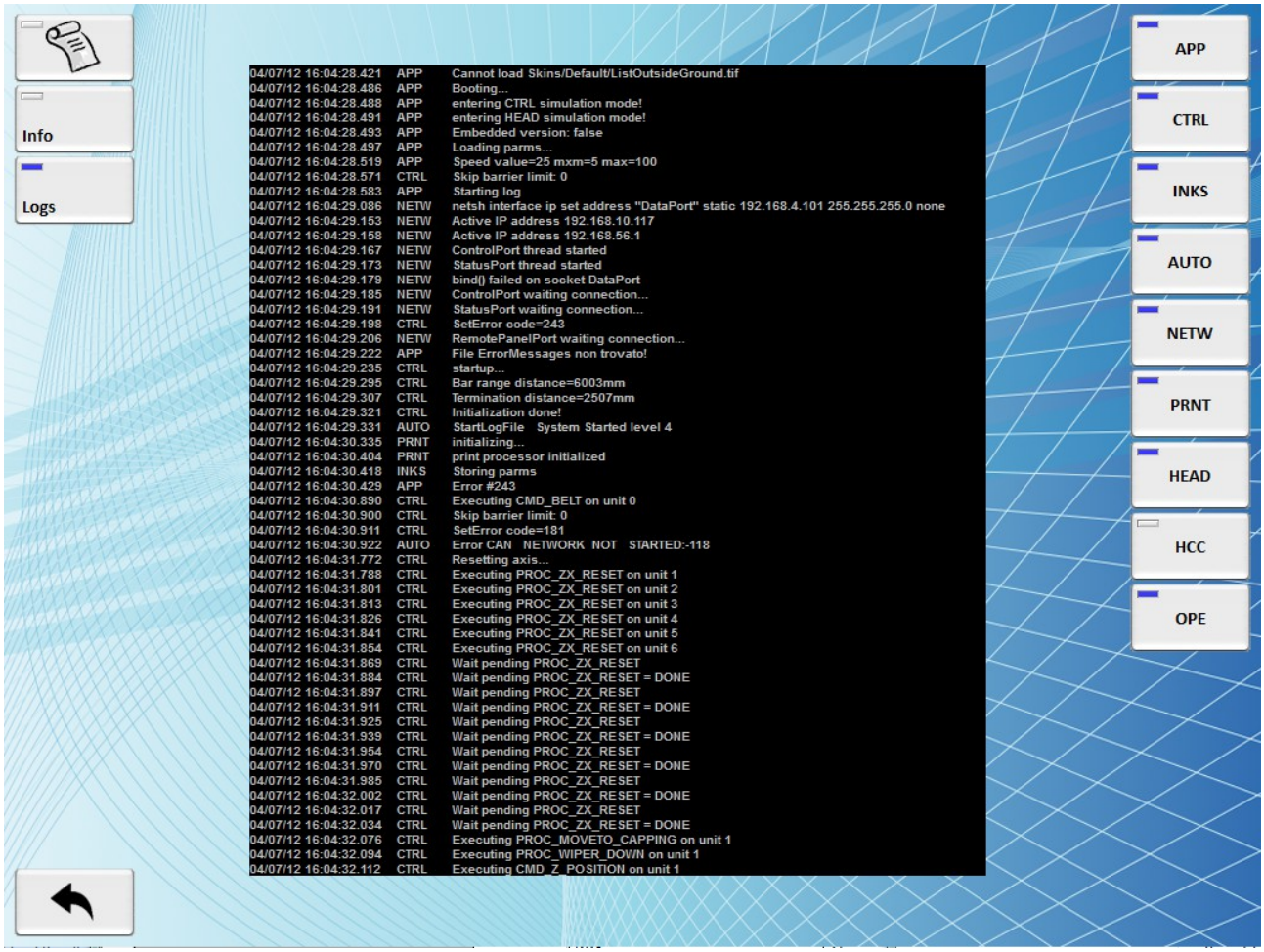
[*Month*] This button apply a filter to the list, indicating the monthly production.

6.2. Info

This panel contains information about the software versions, the serial number of the machine and the installation date.



6.3. Logs


Info
Logs
APP
CTRL
INKS
AUTO
NETW
PRNT
HEAD
HCC
OPE
04/07/12 16:04:28.421 APP Cannot load Skins/Default/ListOutsideGround.tif
04/07/12 16:04:28.486 APP Booting...
04/07/12 16:04:28.488 APP entering CTRL simulation mode!
04/07/12 16:04:28.491 APP entering HEAD simulation mode!
04/07/12 16:04:28.493 APP Embedded version: false
04/07/12 16:04:28.497 APP Loading parms...
04/07/12 16:04:28.519 APP Speed value=25 mxm=5 max=100
04/07/12 16:04:28.571 CTRL Skip barrier limit: 0
04/07/12 16:04:28.583 APP Starting log
04/07/12 16:04:29.086 NETW netsh interface ip set address "DataPort" static 192.168.4.101 255.255.255.0 none
04/07/12 16:04:29.153 NETW Active IP address 192.168.10.117
04/07/12 16:04:29.158 NETW Active IP address 192.168.56.1
04/07/12 16:04:29.167 NETW ControlPort thread started
04/07/12 16:04:29.173 NETW StatusPort thread started
04/07/12 16:04:29.179 NETW bind() failed on socket DataPort
04/07/12 16:04:29.185 NETW ControlPort waiting connection...
04/07/12 16:04:29.191 NETW StatusPort waiting connection...
04/07/12 16:04:29.198 CTRL SetError code=243
04/07/12 16:04:29.206 NETW RemotePanelPort waiting connection...
04/07/12 16:04:29.222 APP File ErrorMessages non trovato!
04/07/12 16:04:29.235 CTRL startup...
04/07/12 16:04:29.295 CTRL Bar range distance=6003mm
04/07/12 16:04:29.307 CTRL Termination distance=2507mm
04/07/12 16:04:29.321 CTRL Initialization done!
04/07/12 16:04:29.331 AUTO StartLogFile System Started level 4
04/07/12 16:04:30.335 PRNT initializing...
04/07/12 16:04:30.404 PRNT print processor initialized
04/07/12 16:04:30.418 INKS Storing parms
04/07/12 16:04:30.429 APP Error #243
04/07/12 16:04:30.890 CTRL Executing CMD_BELT on unit 0
04/07/12 16:04:30.900 CTRL Skip barrier limit: 0
04/07/12 16:04:30.911 CTRL SetError code=181
04/07/12 16:04:30.922 AUTO Error CAN NETWORK NOT STARTED:-118
04/07/12 16:04:31.772 CTRL Resetting axis...
04/07/12 16:04:31.788 CTRL Executing PROC_ZX_RESET on unit 1
04/07/12 16:04:31.801 CTRL Executing PROC_ZX_RESET on unit 2
04/07/12 16:04:31.813 CTRL Executing PROC_ZX_RESET on unit 3
04/07/12 16:04:31.826 CTRL Executing PROC_ZX_RESET on unit 4
04/07/12 16:04:31.841 CTRL Executing PROC_ZX_RESET on unit 5
04/07/12 16:04:31.854 CTRL Executing PROC_ZX_RESET on unit 6
04/07/12 16:04:31.869 CTRL Wait pending PROC_ZX_RESET
04/07/12 16:04:31.884 CTRL Wait pending PROC_ZX_RESET = DONE
04/07/12 16:04:31.897 CTRL Wait pending PROC_ZX_RESET
04/07/12 16:04:31.911 CTRL Wait pending PROC_ZX_RESET = DONE
04/07/12 16:04:31.925 CTRL Wait pending PROC_ZX_RESET
04/07/12 16:04:31.939 CTRL Wait pending PROC_ZX_RESET = DONE
04/07/12 16:04:31.954 CTRL Wait pending PROC_ZX_RESET
04/07/12 16:04:31.970 CTRL Wait pending PROC_ZX_RESET = DONE
04/07/12 16:04:31.985 CTRL Wait pending PROC_ZX_RESET
04/07/12 16:04:32.002 CTRL Wait pending PROC_ZX_RESET = DONE
04/07/12 16:04:32.017 CTRL Wait pending PROC_ZX_RESET
04/07/12 16:04:32.034 CTRL Wait pending PROC_ZX_RESET = DONE
04/07/12 16:04:32.076 CTRL Executing PROC_MOVETO_CAPPING on unit 1
04/07/12 16:04:32.094 CTRL Executing PROC_WIPER_DOWN on unit 1
04/07/12 16:04:32.112 CTRL Executing CMD_Z_POSITION on unit 1

This is a debug page where the user can access to supply quickly to MS information about the working flow of the printer.

These information could be useful to receive the best and fast support by MS.

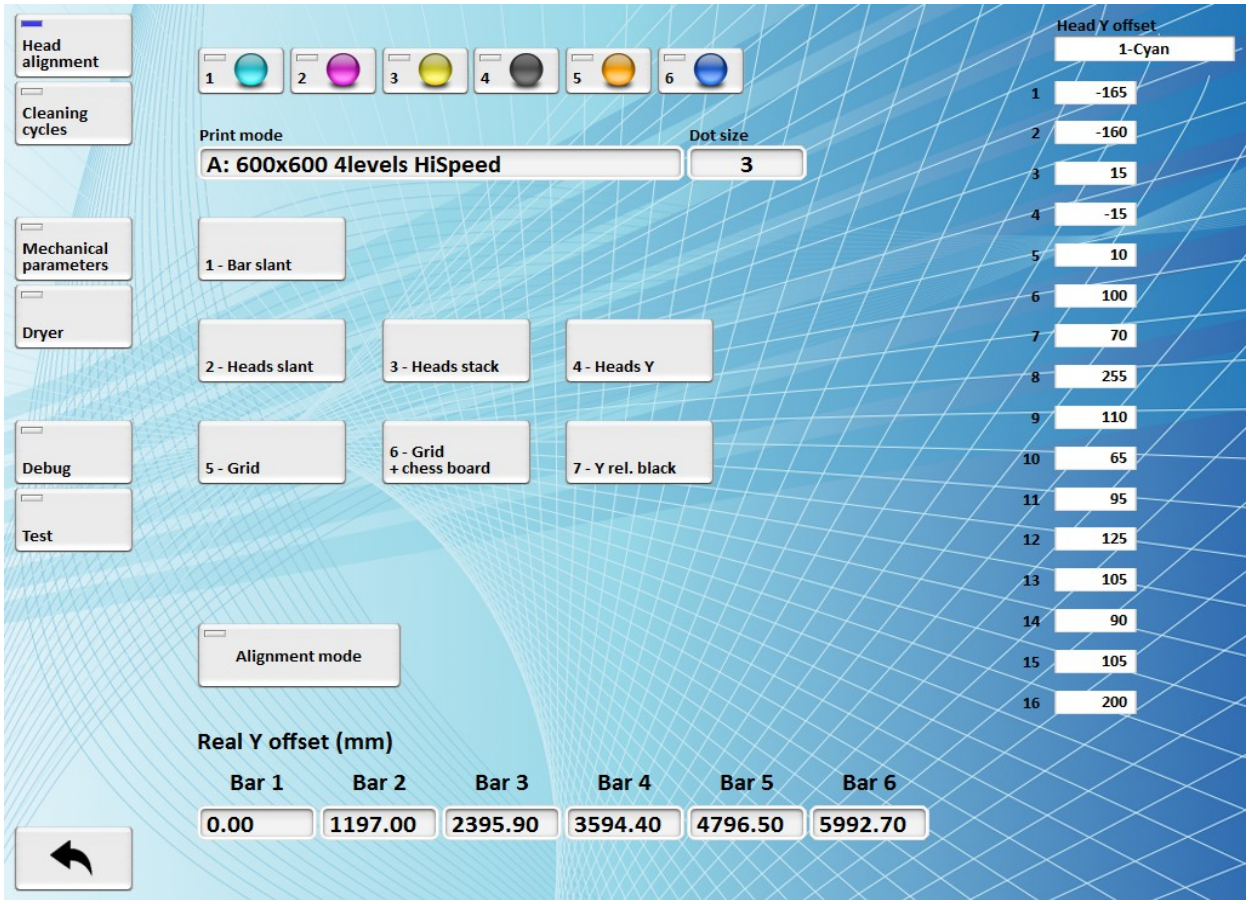
It is possible to scroll the list just moving the finger over it.

7. Machine settings and diagnostics

This section describes the diagnostic functionality and the changeable machine parameters. Most of these options are available only to authorized users. Some of them are available only to administrators.

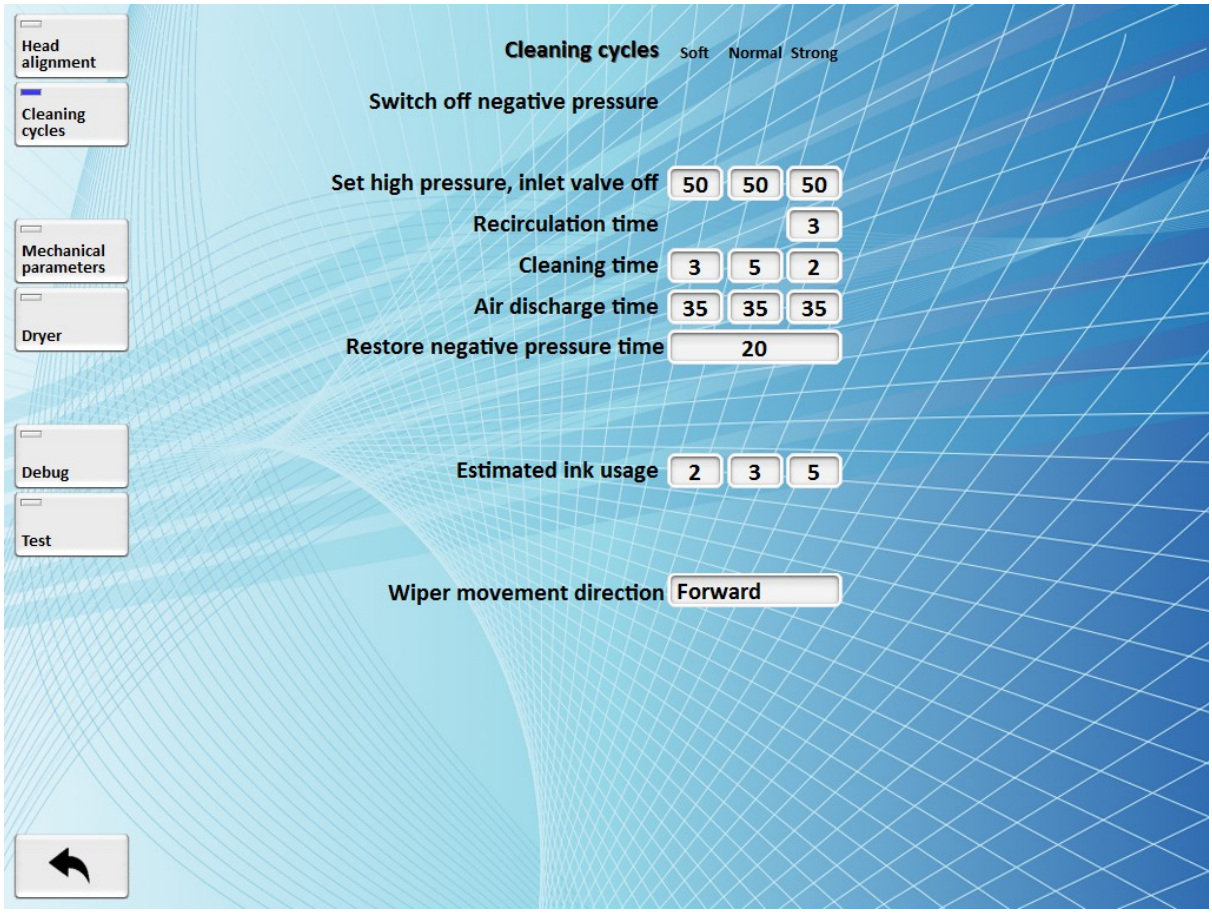
7.1. Head alignment

This page contain the electronic alignment data and test print for mechanical alignment. Only the administrators users can change these values.

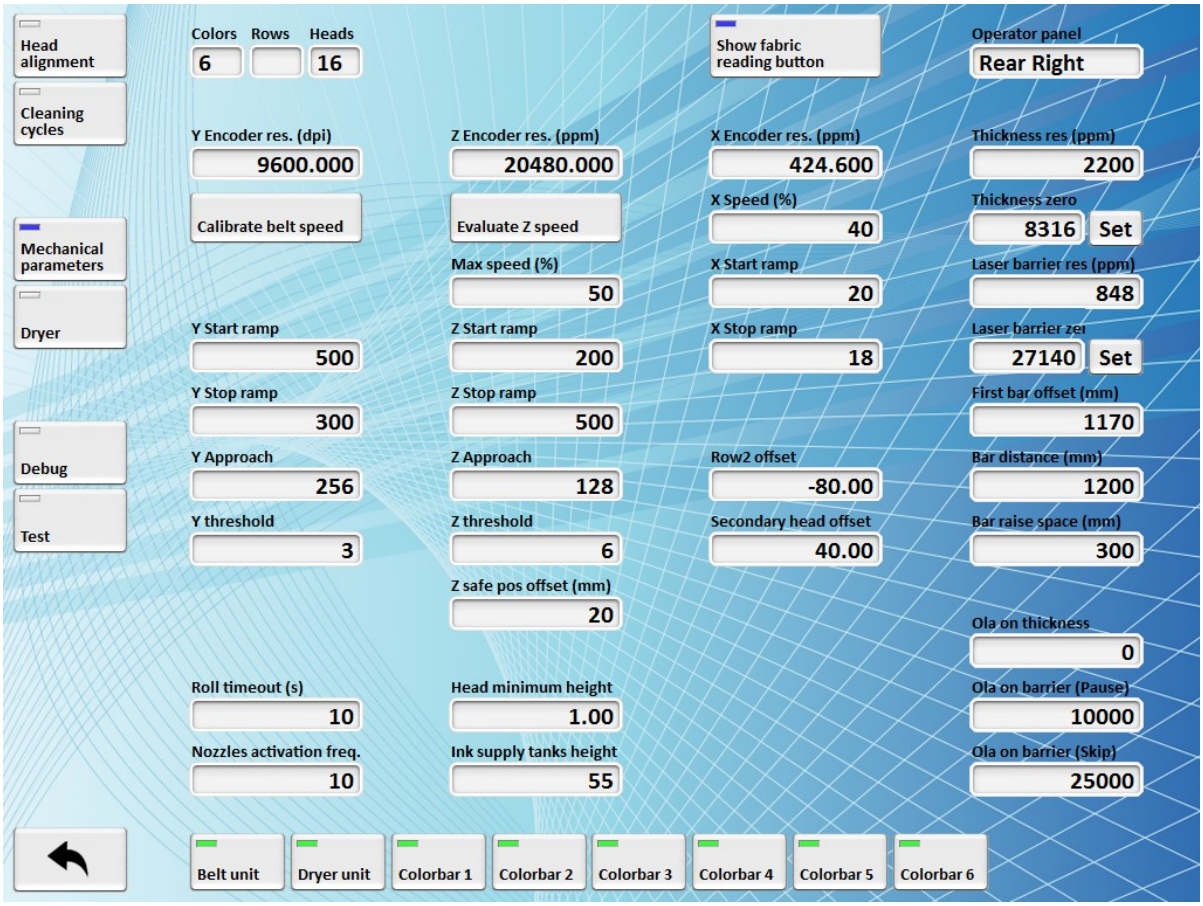


7.2. Cleaning cycles

This page is used to change the timing of the various cleaning cycles. The three columns are used for “Soft cleaning”, “Cleaning” and “Recycle”. These values can be changed only by the administrators.



7.3. Mechanical parameters



[*Roll timeout (s)*] This parameter set the time to wait before to get up the press roll after a belt pause command.

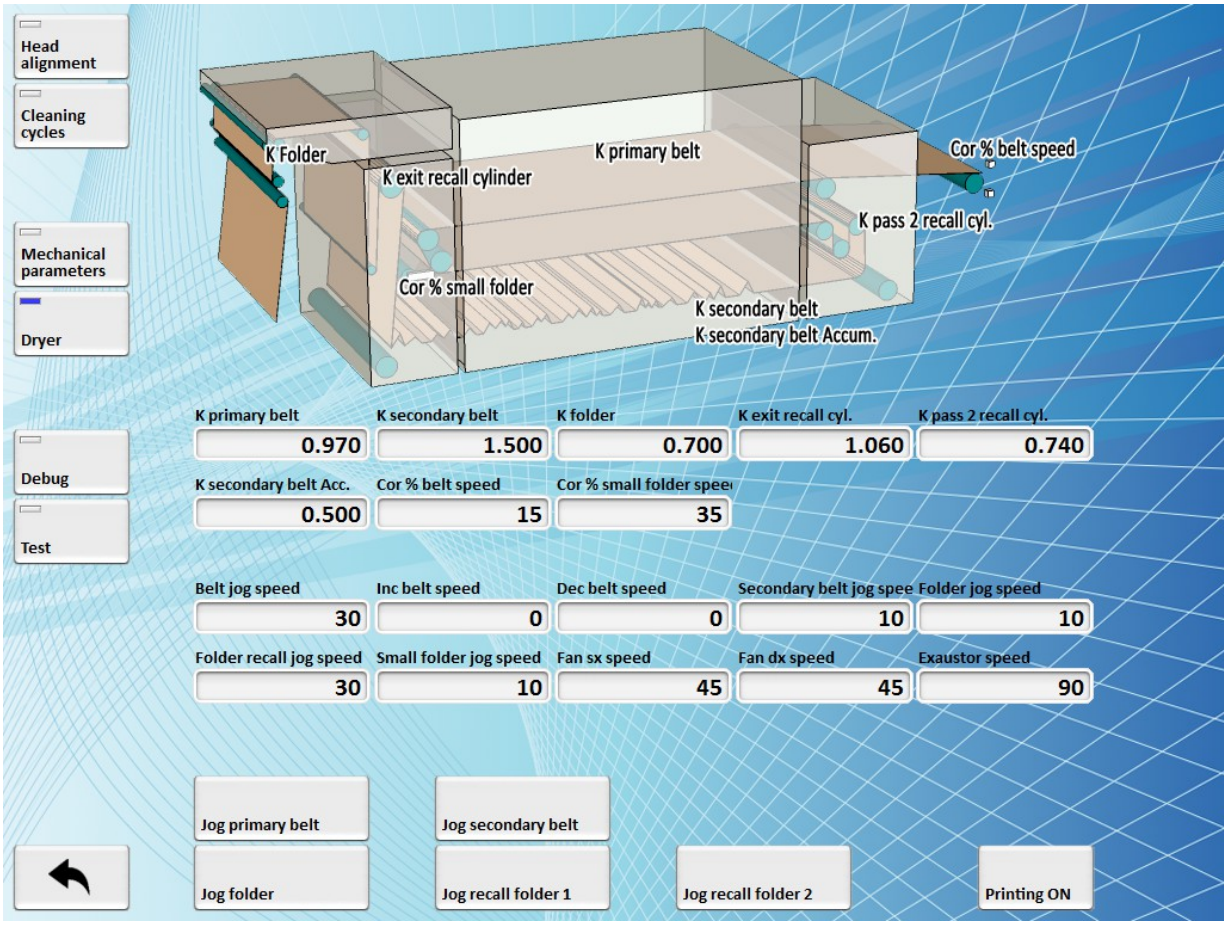
[*Nozzles activation freq.*] This parameter set the frequency of the nozzle activation command. Lower values mean more frequency (range 1-255).

[*Ola on barrier (Pause)*] This is threshold value of the laser barrier sensor that detect the fold on the fabric. When the reading exceed this value the software will stop the belt movement.

[*Ola on barrier (Skip)*] This is threshold value of the laser barrier sensor that detect the fold on the fabric. When the reading exceed this value the software will activate the ola procdure.

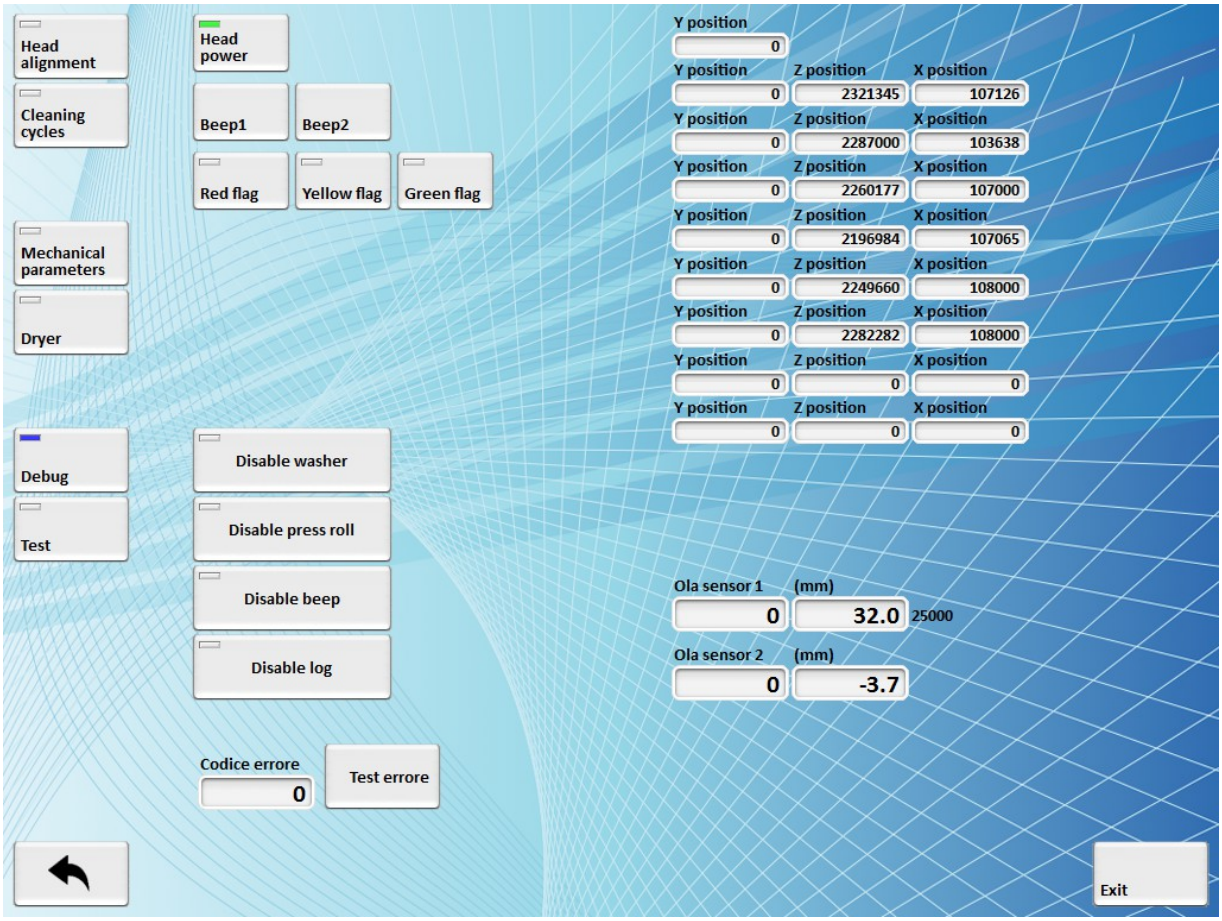
7.4. Dryer

This page is used to control and modify the parameters of the dryer unit. These values can be changed only by the administrators.



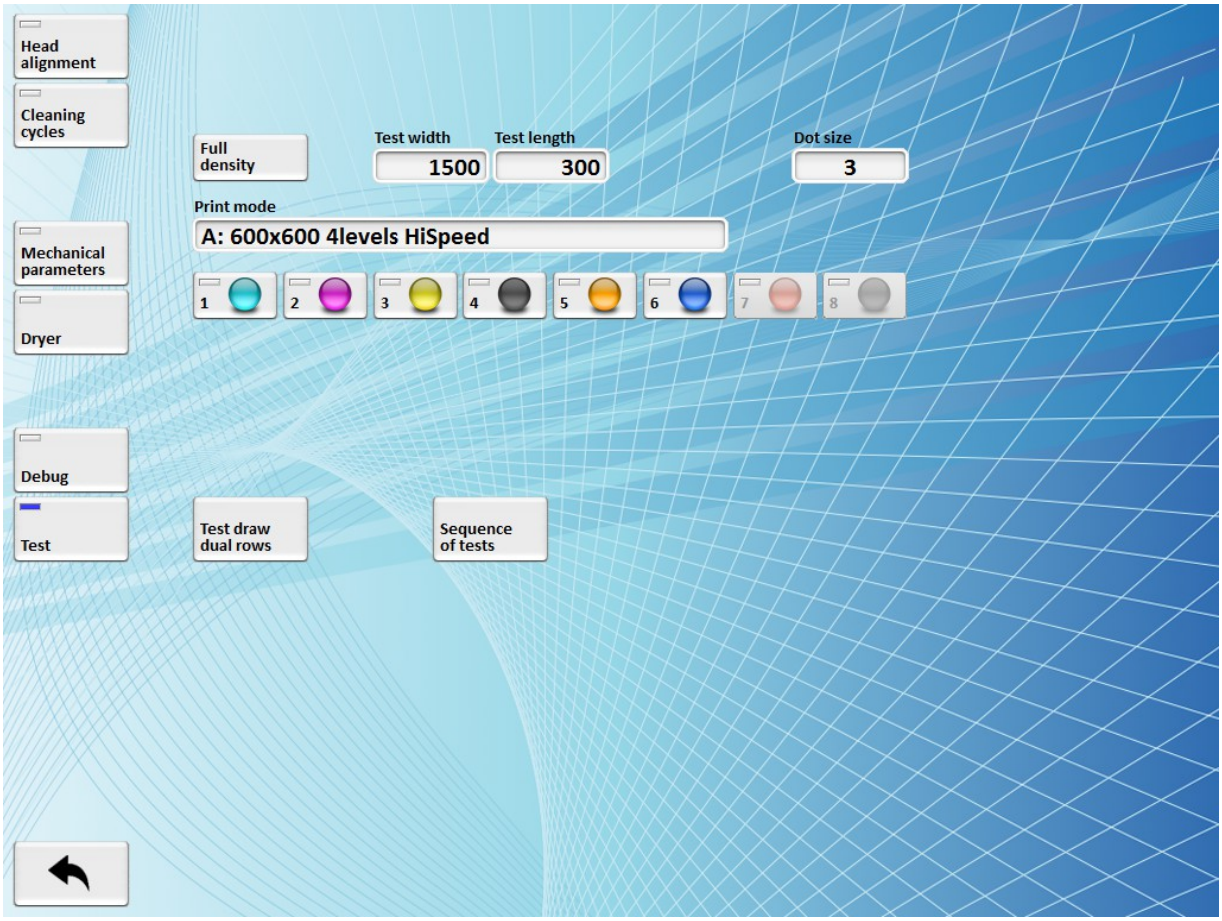
7.5. Debug

This page is used to perform some debug operations.



7.6. Test

This page is used to print some tests pattern.



8. Remote access

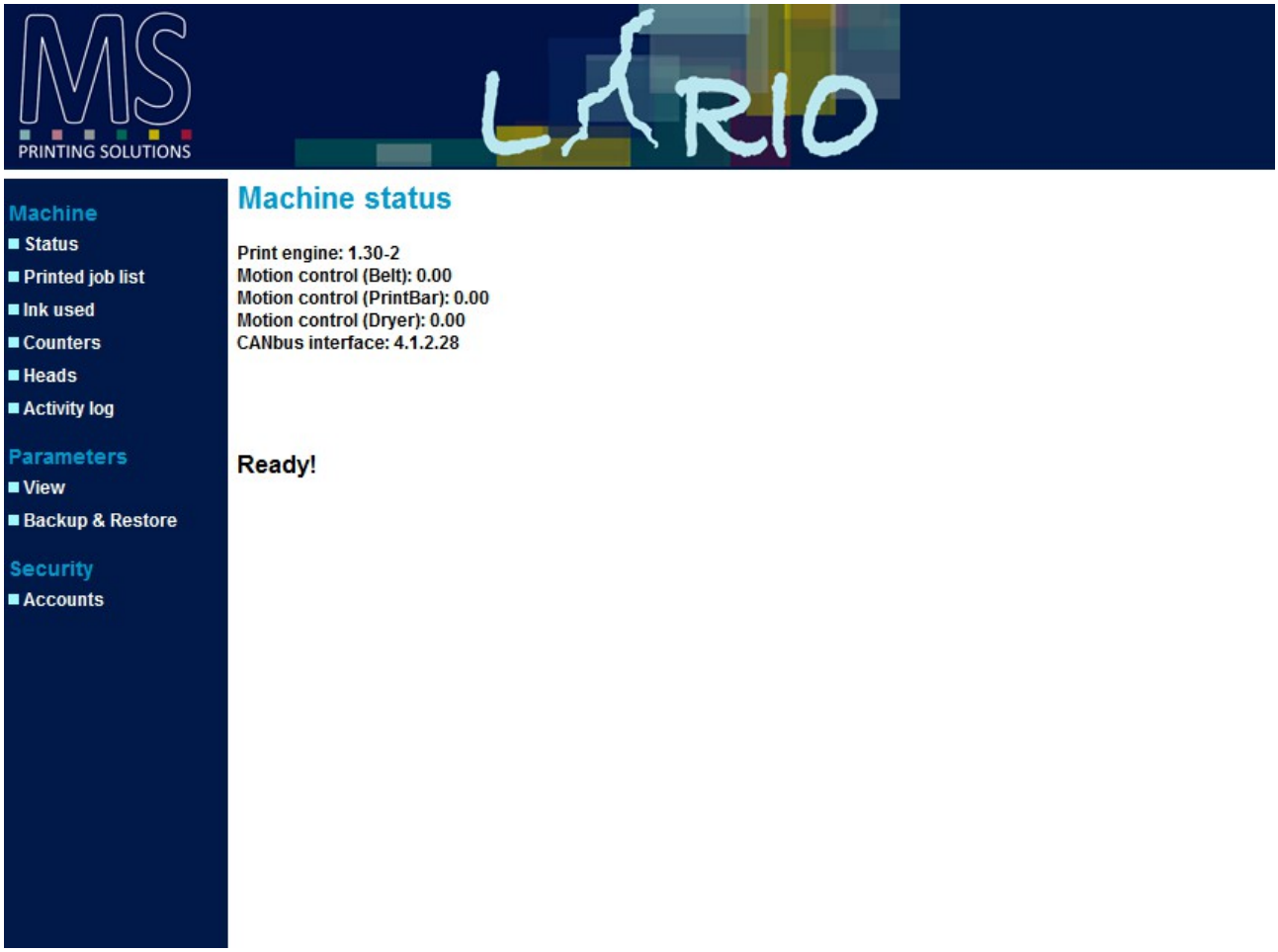
The RIP software computer is directly connected to the machine with a 10Gbit network. Trough this connection is possible to access to the integrated *web server* of the LaRio, as the machine is a web site, using the standard browser (i.e. Internet Explorer, Mozilla Firefox, ...).

The address to enter is the IP address of the machine, usually 192.168.4.101. You can check it in the general parameters configuration page.

The connection is protected with the same user access control used on the machine, so the user name and the password will be required. It is possible to check the current user name in the Login page on the main panel. The first letter of the user name insert in the login window of the browser must be uppercase.

On the machine website it is possible to read several information of the state of the LaRio in real time. An important issue is the possibility to save and restore the machine parameters from the “Backup & Restore” menù.

It is strongly suggested to make a periodical backup of the parameters.



9. Trouble shooting

In case of error a window is displayed with the error codes and a short descripton.

Initialization errors	
201 Parameter file not found	The machine parameter file has not been found. During first start this is normal. Parameters are set on default values.
202 Invalid parameter data	The machine parameters file is corrupt. The system tries to recover a previous parameters saving which, anyway could have not all the correct values .This situation must be pointed out as soon as possible because it could indicate a firmware CF card failure.
203 Cannot write parameter file	It's not possible to save the parameter file. It's to be considered a very heavy error because it means that the CF card containing the firmware is ruined.
Errors on the heads control sub- system	
222 Head board connection failed	The PrintEngine could not connect to one or more heads boards. Diagnostics leds on net boards allow to verify the communication.
223 Head init failure	During the initialization the Print Engine could not recognize one or more heads. The heads not recognized are highlighted in red in the leds right down in the monitor. Verify the connections between head and control card and this latter and the controller. Check also the correct configuration of control card (DIP switch)
224 Head communication failure	The controller could not communicate with one or more heads. The head has been correctly recognized but the transfer of some information has not been possible.
225 Head communication timeout	The controller has not been able to communicate with one or more heads during the print. The problem can depend on a reduced data transfer speed due to the wear and tear of the USB cable in chain.

Errors on communication network	
241 Network init failed	The Print Engine has not been able to initialize the network sub -system. The software in the CF card is corrupt.
242 Invalid network configuration	The Print Engine could not find a correct network configuration. The software in the CF card is corrupt.
243 Can't open data port	It's not possible to open the communication port. The software of the CF card is corrupt.
244 Can't open status port	It's not possible to open the communication port. The software of the CF card is corrupt

245 Can't open control port	It’s not possible to open the communication port. The software of the CF card is corrupt
246 Can't open log port	It’s not possible to open the communication port. The software of the CF card is corrupt
247 RIP authentication failure	A print job has been launched from a RIP that did not authentify correctly or has not been activated. The enabled RIP can be checked in the Settings page. The RIP enabling is contained in the hardware key connected to Print Engine.
248 RIP command error	RIP sent a not recognized command.
249 RIP parameter error	RIP sent a not valid parameter inside a recognized command .

Additional motion errors	
251 X motion Z axis reset required connection failed	To perform an X axis motion must be done the Z axis reset before.
252 X motion Z axis engaged	The X motion request cannot be performed due Z axis engagement. It means the the print bar unit could collide with the capping station.
251 Z motion X axis reset required	To perform a Z axis motion must be done the X axis reset before.
251 Z motion X axis engaged	The Z motion request cannot be performed due X axis engagement. It means the the print bar unit could collide with the capping station.

Automation errors (Master)	
7 Y positioning timeout (begin)	The positioning control unit did not answer in time during the starting phase of the belt positioning.
8 Y positioning timeout (end)	The positioning control unit did not answer in time during the final phase of the belt positioning
The next error codes represent also the unit print bar that has the problem. 30 is the first bar, 31 is the second one, 32 is the thirst one … 48 is the first one, 50 is the thirst ...	
30/37	The print bar unit did not answer in time during the beginning of the X reset procedure.
40/47	The print bar unit did not answer in time during the end of the X reset procedure.
48/55	The print bar unit did not answer in time during the beginning of the Z reset procedure.

56/62	The print bar unit did not answer in time during the end of the Z reset procedure.
63/70	The print bar unit did not answer in time during the beginning of the positioning on the X axis.
71/78	The print bar unit did not answer in time during the end of the positioning on the X axis.
79/86	The print bar unit did not answer in time during the end of the positioning on the Z axis.
87/94	The print bar unit did not answer in time during the beginning of the positioning on the Z axis.
95/102	The print bar unit did not answer in time during the beginning of the jog movement on the Z axis.
103/110	The print bar unit did not answer in time during the end of the jog movement on the Z axis.
111/118	The print bar unit did not answer in time during the beginning of the jog movement on the X axis.
119/126	The print bar unit did not answer in time during the end of the jog movement on the X axis.
127/134	The print bar unit did not answer in time to the encoder read request.
135/142	Wrong wiper position command.
143/150	The print bar unit did not answer in time during the beginning of the wiping positioning.
151/158	The print bar unit did not answer in time during the end of the wiping positioning.
159/166	The print bar unit did not answer in time during the beginning of the Y encoder reset.
167/174	The print bar unit did not answer in time during the end of the Y encoder reset.

Field bus errors (CAN) **When not clearly reported in the table the second value indicates the address of the card at the origin of the error : 103 = Plotter Unit, 104 = Dryer unit, 1 bar 1, 2 bar 2, ...**	
-334 CANbus restart required	An operation has been performed (as inserting a new CAN unit) which requires the restart of communications on CAN.
-338 CANbus off	The field bus is off for a previous hardware error.
181 CANbus initialization failed	CANbus communication could not be initialized. Check the IXXAT board driver installation and status on the Firmware computer. Check if the IXXAT board is correctly inserted in the motherboard.

182	CANbus error adding configured nodes. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
183	CANbus error writing to a can node. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
184	CANbus diagnostic error. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
185	CANbus error during the SDO status request. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
186	CANbus communication error. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
187	CANbus communication error. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
188	CANbus error due to a communication timeout with a printing bar unit. Check the CANbus wire connection or replace the Fuj32 board on the unit. Exclude the node from the mechanical parameters panel to be able to move the heads station in the parking position.
190	CANbus error reading the encoder values. Check the CANbus wire connection or replace the Fuj32 board on the unit.
191	CANbus error during the SDO sending. Check the CANbus wire connection or replace the Fuj32 board on the unit.
192	CANbus error during the SDO receiving. Check the CANbus wire connection or replace the Fuj32 board on the unit.
193	CANbus error due to a communication timeout with the dryer unit. Check the CANbus wire connection or replace the Fuj32 board on the unit.

Belt unit errors	
189, 1, 103 Plotter unit Timeout MM switch	Timeout error on MisoMosi board. Check the MisoMosi connections.

189, 22, 103 Plotter unit Timeout Y axis start forward	Internal error.
189, 23, 103 Plotter unit Timeout Y axis start reverse	Internal error.
189, 30, 103 Plotter unit Emergency engaged	It is necessary to recover the emergency buttons.
189, 31, 103 Plotter unit Belt failure	Fault on the motor driver. Check eventual error code on the display of the driver.
189, 32, 103 Plotter unit Belt protection	The belt is not in the right position while moving. Check the position sensor on the belt.
189, 33, 103 Plotter unit Fold detected	The laser barrier sensor has detected a big fold on the fabric. Remove it before restart the print procedure.
189, 34, 103 Plotter unit Washer failure	The washer has not reached the correct position. Check it the washer is moving or if the position sensor is working properly.
189, 35, 103 Plotter unit Washer thermal switch	The thermal switch has been activated. Check the brushes motor or the brushes are free to turn.
189, 36, 103 Plotter unit Timeout start Y positioning	Internal error.
189, 37, 103 Plotter unit Y axis reset not executed	Internal error.
189, 38, 103 Plotter unit Belt movement with the covers opened	It is not possible to move the belt with the rear covers opened.
189, 39, 103 Plotter unit Timeout start Y positioning	Internal error.
189, 40, 103 Plotter unit	Internal error.
189, 41, 103 Plotter unit	It is not possible to move the belt with the rear covers opened.

189, 42, 103 Plotter unit	A PrintBar unit has requested to stop the belt movement for different reasons.
189, 44, 103 Plotter unit Stop for introduction protection	The machine has stopped because the introduction is not ready. Set the introduction in run mode.
189, 46, 103 Plotter unit Wrong ola threshold value (skip)	Parameter error. The ola threshold set point is out of range.
189, 47, 103 Plotter unit Wrong ola threshold value (pause)	Parameter error. The ola threshold set point is out of range.
189, 48, 103 Plotter unit Introduction barrier active	Something is present or somebody is working in the introduction area. Remove anything from the security sensors.

PrintBar unit errors	
189, 1, #bar number# PrintBar unit Timeout MM switch	Timeout error on MisoMosi board. Check the MisoMosi connections.
189, 30, #bar number# PrintBar unit Emergency engaged	It is necessary to recover the emergency wire.
189, 38, #bar number# PrintBar unit Z axis reset not executed	Movement request before to execute the axis reset.
189, 39, #bar number# PrintBar unit Timeout wiper home	Timeout error during wiper movement to the home position. Check if the wiper belt is turning or the wiper motor is running.
189, 40, #bar number# PrintBar unit Timeout wiper end	Timeout error during wiper movement to the end position. Check if the wiper belt is turning or the wiper motor is running.
189, 41, #bar number# PrintBar unit Degasser failure	The vacuum pump is not working properly.
189, 42, #bar number# PrintBar unit Degasser failure	The vacuum system has not reached the requested set point. Control if there are some leakages in the vacuum equipment.
189, 43, #bar number# PrintBar unit Wiper failure	Check the wiper motor.

189, 44, #bar number# PrintBar unit Z axis failure	Check the Z axis motor.
189, 45, #bar number# PrintBar unit [PP_X_1]	Error on the motor of the capping (electrical box side). Check if the motor is well connected or it is running, or if the capping station is perpendicular to the belt.
189, 46, #bar number# PrintBar unit [PP_X_1]	Error on the motor of the capping (operator side). Check if the motor is well connected or it is running, or if the capping station is perpendicular to the belt.
189, 48, #bar number# PrintBar unit Timeout loading ink 1	Timeout error loading the ink to primary tank (over the heads). Check if the color pump is running properly or if the ink is present in the secondary tank.
189, 49, #bar number# PrintBar unit Timeout loading water	Timeout error loading the water in the wiper tank. Check if the water equipment valve is working properly.
189, 50, #bar number# PrintBar unit Wacum failure	Error on the Venturi system. Check air pressure connection or if the air pressure is present.
189, 51, #bar number# PrintBar unit Wiper inhibited	It is not possible to execute the wiping operation. The print bar has been positioned too much close to the wiping station.
189, 55, #bar number# PrintBar unit Head safety switch	Something on the belt activate the safety bar protection. Remove anything present on the belt or get up the heads bar to an higher position.
189, 56, #bar number# PrintBar unit Color tank 1 max level reached	Error during the ink loading operation. Check if the level sensor is working correctly.
189, 58, #bar number# PrintBar unit Wiper water max level reached	The higher level in the wiper water tank has been reached. Check the other sensors level or the water valve.
189, 62, #bar number# PrintBar unit	Error during the Z axis reset. Check if the bar is able to move up or the home sensor is working or is in the right position.
189, 110, #bar number# PrintBar unit	The bar is not moving or the Z encoder is not reading the position while moving.

Dryer unit errors	
189, 1,104 Dryer unit Timeout MM switch	Timeout error on MisoMosi board. Check the MisoMosi connections.
189, 30,104 Dryer unit Emergency engaged	It is necessary to recover the emergency buttons.

189, 31,104 Dryer unit Belt failure	Error on the driver of the motor of the primary belt.
189, 32,104 Dryer unit Secondary belt failure	Error on the driver of the motor of the secondary belt.
189, 33,104 Dryer unit Folder error	Error on the driver of the motor of the folder.
189, 34,104 Dryer unit Folder recall error	Error on the driver of the motor of the folder recall.
189, 35,104 Dryer unit Small folder error	Error on the driver of the motor of the small folder.
189, 36,104 Dryer unit Left fans failure	Error on the driver of the motor of the left fans.
189, 37,104 Dryer unit Right fans failure	Error on the driver of the motor of the right fans.
189, 38,104 Dryer unit Exhaust pipe motor failure	Error on the driver of the motor of the exhaust pipe system.
189, 39,104 Dryer unit Burner 1 failure	Error on the driver of the motor of the burner number 1.
189, 40,104 Dryer unit Burner 2 failure	Error on the driver of the motor of the burner number 2.
189, 41,104 Dryer unit Fans over-current	The thermal switch of the motor of the fans has been activated.
189, 42,104 Dryer unit Jog with nose high	It is not possible to move the primary belt while the nose is in the high position.
189, 42,104 Dryer unit Folder fault	The folder dancer has reached the highest position. Put it in the correct position before to restart.

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